

***IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES***

Applicant: Mitsuo YAMADA et al.
Title: RESINOUS TUBE AND FUEL SYSTEM PIPING TUBE
Appl. No.: 10/617,731
Filing Date: 7/14/2003
Examiner: Michael C. Miggins
Art Unit: 1772
Confirmation Number: 3612

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief - Patents
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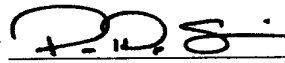
Sir:

In response to the Notice of Non-Compliant Appeal Brief mailed February 23, 2009,
please find the enclosed Claims Appendix.

Respectfully submitted,

Date : March 20, 2009

By



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CLAIMS APPENDIX

1. (Previously Presented) A resinous tube comprising:
at least one first cylindrical resin layer (A) comprising at least one resin selected from the group consisting of polybutylene terephthalate (PBT), polybutylene naphthalate (PBN), polyethylene terephthalate (PET) and polyethylene naphthalate (PEN); and
at least one second cylindrical resin layer (B) formed generally coaxially with the at least one first cylindrical layer and comprising at least one copolymer which comprises polybutylene terephthalate (PBT) or polybutylene naphthalate (PBN),
wherein the at least one second cylindrical resin layer (B) is in direct contact with and serves as a supporting layer for the at least one first cylindrical resin layer (A),
wherein the at least one second cylindrical resin layer (B) comprises a block copolymer which comprises at least one segment selected from the group consisting of polybutylene terephthalate (PBT) and polybutylene naphthalate (PBN) as a hard segment, and at least one segment selected from the group consisting of polytetramethylene glycol and polycaprolactone as a soft segment,
wherein a cylindrical resin layer forming an innermost layer of the resinous tube is electrically conductive.
2. (Original) A resinous tube as claimed in Claim 1, wherein the conductive cylindrical resin layer forming the innermost layer has a volume resistivity value of not higher than $10^6 \Omega \cdot \text{cm}$.
3. (Original) A resinous tube as claimed in Claim 1, wherein the conductive cylindrical resin layer forming the innermost layer has a thickness within a range of from 3 to 30 % of a total thickness of all the layers of the resinous tube.
4. (Original) A resinous tube as claimed in Claim 1, wherein the at least one first resin layer (A) has a total thickness within a range of from 3 to 70 % of a total thickness of all the layers of the resinous tube.

7. (Previously Presented) A resinous tube as claimed in Claim 1, wherein the at least one second cylindrical resin layer (B) comprises at least one of:

(i) a random PBT copolymer, or

(ii) a random PBN copolymer,

wherein the random PBT copolymer or the random PBN copolymer comprises:

(a) a copolymer polyester which comprises an acid component and

(b) a glycol component,

wherein the acid component comprises:

at least one of a terephthalic acid, an ester-formable derivative of terephthalic acid, a naphthalenedicarboxylic acid, or an ester-formable derivative of naphthalenedicarboxylic acid, and

at least one of a hydrogenated dimer acid or an ester-formable derivative of hydrogenated dimer acid, and

wherein the glycol component comprises 1, 4-butanediol.

8. (Previously Presented) A resinous tube as claimed in Claim 1, wherein the PBT copolymer is a copolymer polyester prepared by copolymerization of polytetramethylene glycol and a copolymer polyester which includes an acid component and glycol component,

wherein the acid component comprises:

at least one of a terephthalic acid, an ester-formable derivative of terephthalic acid, a naphthalenedicarboxylic acid, or an ester-formable derivative of naphthalenedicarboxylic acid, and

at least one of a hydrogenated dimer acid or an ester-formable derivative of hydrogenated dimer acid, and

wherein the glycol component comprises 1, 4-butanediol.

9. (Previously Presented) A resinous tube as claimed in Claim 1, wherein the conductive cylindrical resin layer forming the innermost layer comprises a resin which comprises a copolymer polyester which comprises an acid component and a glycol component,

wherein the acid component comprises:

at least one of a terephthalic acid, an ester-formable derivative of terephthalic acid, a naphthalenedicarboxylic acid, or an ester-formable derivative of naphthalenedicarboxylic acid, and

at least one of a hydrogenated dimer acid or an ester-formable derivative of hydrogenated dimer acid, and

wherein the glycol component includes 1, 4-butanediol.

10. (Previously Presented) A resinous tube as claimed in Claim 1, wherein the conductive resin layer forming the innermost layer comprises a resin comprising polybutylene terephthalate (PBT) in which ethylene-propylene rubber (EPR) is dispersed, the resin having a volume resistivity value of not higher than $10^6 \Omega \cdot \text{cm}$.

11. (Original) A resinous tube as claimed in Claim 10, wherein the ethylene propylene rubber has a particle size of not larger than 1 μm .

12. (Original) A resinous tube as claimed in Claim 1, wherein the conductive cylindrical resin layer forms part of the at least one first cylindrical resin layer and the at least one second cylindrical resin layer.

13. (Original) A resinous tube as claimed in Claim 1, wherein the conductive resin layer is independent from the at least one first cylindrical resin layer and the at least one second cylindrical resin layer.

14. (Previously Presented) A tube for piping in a fuel system of a vehicle, comprising:
at least one first cylindrical resin layer (A) comprising at least one resin selected from the group consisting of polybutylene terephthalate (PBT), polybutylene naphthalate (PBN), polyethylene terephthalate (PET) and polyethylene naphthalate (PEN); and
at least one second cylindrical resin layer (B) formed generally coaxially with the at least one first cylindrical layer and comprising at least one copolymer which comprises polybutylene terephthalate (PBT) or polybutylene naphthalate (PBN),

wherein the at least one second cylindrical resin layer (B) is in direct contact with and serves as a supporting layer for the at least one first cylindrical resin layer (A),

wherein the at least one second cylindrical resin layer (B) comprises a block copolymer which comprises at least one segment selected from the group consisting of polybutylene terephthalate (PBT) and polybutylene naphthalate (PBN) as a hard segment, and at least one segment selected from the group consisting of polytetramethylene glycol and polycaprolactone as a soft segment,

wherein a cylindrical resin layer forming an innermost layer of the resinous tube is electrically conductive, fuel being in direct contact with an inner surface of the innermost layer.

15. (Previously Presented) A motor vehicle comprising a tube according to Claim 1.

16. (Previously Presented) A fuel system for a motor vehicle comprising a tube according to Claim 14.

17. (Previously Presented) A motor vehicle comprising a fuel system according to Claim 16.

18. (Previously Presented) A resinous tube comprising:

at least one first cylindrical resin layer (A) comprising at least one resin selected from the group consisting of polybutylene terephthalate (PBT), polybutylene naphthalate (PBN), polyethylene terephthalate (PET) and polyethylene naphthalate (PEN); and

at least one second cylindrical resin layer (B) formed generally coaxially with the at least one first cylindrical layer and comprising at least one copolymer which comprises polybutylene terephthalate (PBT) or polybutylene naphthalate (PBN),

wherein the at least one second cylindrical resin layer (B) comprises a block copolymer which comprises at least one segment selected from the group consisting of polybutylene terephthalate (PBT) and polybutylene naphthalate (PBN) as a hard segment, and at least one segment selected from the group consisting of polytetramethylene glycol and polycaprolactone as a soft segment,

wherein a cylindrical resin layer forming an innermost layer of the resinous tube is electrically conductive.

19. (Previously Presented) A resinous tube according to claim 1, wherein the resinous tube is produced by a process comprising extruding the at least one first cylindrical resin layer (A) and the at least one second cylindrical resin layer (B) and adhering the at least one first cylindrical resin layer (A) to the at least one second cylindrical resin layer (B) with an adhesive